CORRESPONDENCE.

AN AID TO THE LOCALIZATION, BY X-RAYS, OF FOREIGN BODIES EMBEDDED IN THE TISSUES.

EDITOR ANNALS OF SURGERY.

WHILE several excellent methods have been devised whereby an object embedded in the tissues can be accurately localized, the surgeon is often in need of some simple method, requiring no special apparatus, whereby he can rapidly determine, by the use of the fluorescent screen, whether, for example, a broken needle is on the palmar or dorsal aspect of a metacarpal bone.

It has been advised that two views, at right angles to one another, should be taken; but this is not always satisfactory, owing, in the case of the hand, to all the metacarpals being projected together in the view with the palm at right angles to the screen, giving rather a confused image, while the object, if small and situated about the centre of the palm, even if at all visible, appears blurred and indistinct.

Another method recommended is to compare the size and sharpness of the image of the embedded body when the hand is turned with its palmar and dorsal surfaces respectively towards the screen; but this plan also often leaves one in doubt, with the flickering and not very brilliant illumination, when using the screen.

As is well known, the relative position of the image of bones and embedded object alters, according to whether the part be held directly in front of the point of emergence of the rays or above or below it; and while this is annoying where exact localization is desired, it occurred to me that use might be made of this fact, in order to determine the depth of the object in the tissues relatively to the bones.

Owing to the rapid divergence of the rays from the luminous point of the tube, it follows that the shadow of any object not actually in contact with the sensitive surface of the screen will change its position when the screen, carrying with it the object, is moved up and down vertically in front of the tube; and the farther the object is from the screen, the greater will be the apparent movement of the shadow on the screen.

When, therefore, the embedded object is farther from the screen than the bones, its shadow will move with greater rapidity than that of the bones, and thus, when the screen carrying with it the part to be examined is raised, the shadow of the object will rise relatively to the bones, and fall when the screen is lowered. On the other hand, when the object is nearer the screen than the bones, the shadow of the bones will rise, when the screen is raised, relatively to the object, and fall when the screen is lowered. If, then, as in practice one naturally does, we take the bones as our fixed points, the image of the embedded object will rise and fall with the screen, relatively to the bones, when the embedded object is on the tube side of the bones; and will appear to fall, relatively to the bones, when the screen is raised, and rise when it is lowered, when it is on the screen side of the bones.

We may put the matter shortly for convenience in working, that, if the shadow of the object rises and falls with the screen, the object is on the tube side of the bones, and when it moves in the opposite direction to that of the screen, it is on the screen side of the bones.

When the shadow of the foreign body does not move relatively to the bones, it must be close to if not actually embedded in them.

Of course, the matter is a perfectly obvious one; but, as I have not seen any mention of it in text-books or journals, I thought it well to draw attention to it as a simple but efficient means of determining in the tissues the relative depth of foreign bodies to the bones.

JOHN A. C. MACEWEN, M.B., C.M.

GLASGOW, SCOTLAND.

THE EXPOSURE OF THE POSTDUODENAL PORTION OF THE COMMON BILE DUCT.

EDITOR ANNALS OF SURGERY.

I WISH to report what I believe to be a new procedure to facilitate exposure of and dealing with the postduodenal portion of the common bile duct. It consists in longitudinal division of the peritoneum to the right of the descending portion of the duodenum, separation with the fingers and turning forward and to the left of the latter. I have done this three times on the cadaver and obtained an excellent exposure of this portion of the duct up to its duodenal entrance. The large vessels remain on the posterior wall, the duct follows the duodenum. The posterior aspect of the head of the pancreas can be approached by the same method.

I believe the above procedure to be superior to the transduodenal route of Mayo or the supraduodenal route of Haasler, being less likely to cause an infection than the former, being farther away from dangerous structures than the latter, and being easier and giving better access than both.

C. M. COOPER, M.B., M.R.C.S.,

Assistant in Clinical Surgery, University of California.